## CLAIMS

I/We claim:

[c1] 1. A method of packaging microelectronic devices, the method comprising:

placing a plurality of singulated radiation responsive dies on a support member;

electrically connecting circuitry of the radiation responsive dies to contacts of the support member; and

forming a barrier on the support member between adjacent radiation responsive dies without an adhesive attaching the barrier to the support member after electrically connecting the circuitry of the dies to the contacts of the support member.

[c2] 2. The method of claim 1 wherein:

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

forming the barrier comprises encapsulating at least a portion of the wire-bonds.

[c3] 3. The method of claim 1 wherein:

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

forming the barrier comprises encapsulating at least a portion of the wire-bonds and a portion of the radiation responsive dies.

[c4] 4. The method of claim 1 wherein forming the barrier comprises dispensing a flowable material onto the support member.

[c5] 5. The method of claim 1 wherein the radiation responsive dies include an active area, and wherein the method further comprises attaching a radiation transmissive window to the barrier over a corresponding active area.

[c6] 6. The method of claim 1 wherein the radiation responsive dies include an active area, and wherein the method further comprises attaching a plurality of radiation transmissive windows to corresponding active areas before forming the barrier on the support member.

[c7] 7. The method of claim 1 wherein:

the radiation responsive dies include an active area;

forming the barrier on the support member comprises dispensing a flowable material onto the support member between adjacent radiation responsive dies without obscuring the active area of the dies; and

the method further comprises attaching radiation transmissive windows to the flowable material such that the windows are individually juxtaposed to corresponding active areas.

[c8] 8. The method of claim 1 wherein the radiation responsive dies include an active area, and wherein the method further comprises:

at least partially curing the barrier; and

attaching a plurality of radiation transmissive windows to the barrier with the windows covering corresponding active areas after at least partially curing the barrier.

[c9] 9. The method of claim 1 wherein:

the radiation responsive dies include an active area;

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

the method further comprises placing a plurality of radiation transmissive windows on corresponding wire-bonds so that the windows cover corresponding active areas before forming the barrier.

[c10] 10. The method of claim 1 wherein the radiation responsive dies include complementary metal-oxide semiconductor image sensors.

[c11] 11. The method of claim 1 wherein the radiation responsive dies include optically responsive active areas.

[c12] 12. The method of claim 1, further comprising attaching a plurality of radiation transmissive windows to the barrier and/or corresponding dies after placing the dies on the support member.

[c13] 13. The method of claim 1 wherein:

the radiation responsive dies comprise a first die and a second die adjacent to the first die;

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

forming the barrier on the support member comprises forming a barrier portion between the first die and the second die, the barrier portion encapsulating at least a portion of the wire-bonds of the first die and at least a portion of the wire-bonds of the second die.

[c14] 14. A method of packaging microelectronic devices, the method comprising:

providing a plurality of singulated radiation responsive dies, the radiation responsive dies including an active area responsive to radiation transmitted from an external source;

coupling the individual radiation responsive dies to a support member;

electrically coupling circuitry of the radiation responsive dies to contacts of the support member;

forming a barrier between adjacent radiation responsive dies; and

attaching a plurality of radiation transmissive windows to the barrier and/or the corresponding dies.

[c15] 15. The method of claim 14 wherein forming the barrier comprises encapsulating a portion of the radiation responsive dies.

[c16] 16. The method of claim 14 wherein forming the barrier comprises dispensing a flowable material onto the support member.

[c17] 17. The method of claim 14 wherein attaching the radiation transmissive windows occurs after coupling the dies to the support member.

[c18] 18. The method of claim 14 wherein:

the radiation responsive dies comprise a first die and a second die adjacent to the first die;

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

forming the barrier comprises forming a barrier portion between the first die and the second die, the barrier portion encapsulating at least a

portion of the wire-bonds of the first die and at least a portion of the wire-bonds of the second die.

[c19] 19. The method of claim 14, further comprising at least partially curing the barrier before attaching the radiation transmissive windows to the barrier.

[c20] 20. The method of claim 14 wherein:

electrically connecting circuitry of the dies to contacts of the support member comprises wire-bonding the dies to the support member; and

forming the barrier occurs after wire-bonding the radiation responsive dies to the support member.

[c21] 21. A method of packaging microelectronic devices, the method comprising:

coupling a plurality of singulated radiation responsive dies to a support member, the radiation responsive dies including an active area;

wire-bonding the radiation responsive dies to the support member;

forming a barrier between adjacent radiation responsive dies; and

attaching a radiation transmissive window to the barrier after forming the barrier between adjacent dies, the window covering the active area of the corresponding die.

[c22] 22. The method of claim 21 wherein forming the barrier comprises encapsulating at least a portion of the wire-bonds.

[c23] 23. The method of claim 21 wherein forming the barrier occurs after wire-bonding the radiation responsive dies to the support member.

[c24] 24. The method of claim 21 wherein forming the barrier comprises dispensing a flowable material onto the support member.

[c25] 25. The method of claim 21 wherein:

forming the barrier comprises dispensing a flowable material onto the support member; and

attaching the radiation transmissive window comprises moving the radiation transmissive window into the flowable material.

[c26] 26. The method of claim 21, further comprising:

curing the barrier after attaching the radiation transmissive window; and

cutting the support member and the barrier to separate the microelectronic devices from each other.

[c27] 27. A method of packaging microelectronic devices, the method comprising:

providing a plurality of singulated radiation responsive dies, the radiation responsive dies having a first side with an active area and a second side opposite the first side;

coupling the individual radiation responsive dies to a support member with the second side facing the support member;

wire-bonding the radiation responsive dies to the support member;

positioning a plurality of radiation transmissive windows over corresponding active areas after wire-bonding the dies to the support member; and

forming a barrier between adjacent radiation responsive dies after positioning the radiation transmissive windows.

[c28] 28. The method of claim 27 wherein forming the barrier comprises encapsulating at least a portion of the wire-bonds.

[c29] 29. The method of claim 27 wherein forming the barrier comprises dispensing a flowable material onto the support member.

[c30] 30. The method of claim 27 wherein positioning the windows comprises attaching the windows to the corresponding active areas.

[c31] 31. The method of claim 27 wherein:

positioning the windows comprises disposing the windows over the corresponding active areas without attaching the windows to the active areas; and

forming the barrier comprises dispensing the barrier at least proximate to the windows to secure the windows over the corresponding active areas.

[c32] 32. The method of claim 27 wherein:

positioning the windows comprises disposing the windows on corresponding wire-bonds over the corresponding active areas so that the wire-bonds support the windows; and

forming the barrier comprises dispensing the barrier at least proximate to the windows to secure the windows over the corresponding active areas.

[c33] 33. A plurality of microelectronic devices, comprising:

a support member;

a plurality of radiation responsive dies attached to the support member, the radiation responsive dies having an active area;

a plurality of wire-bonds electrically coupling the radiation responsive dies to the support member;

a barrier attached without an adhesive to the support member between adjacent radiation responsive dies, the barrier including barrier

portions that at least partially encapsulate the wire-bonds of corresponding pairs of adjacent radiation responsive dies; and

a plurality of radiation transmissive windows attached to the barrier and covering corresponding active areas.

[c34] 34. The microelectronic devices of claim 33 wherein the barrier encapsulates a portion of the radiation responsive dies.

[c35] 35. The microelectronic devices of claim 33 wherein the support member comprises a substrate.

[c36] 36. The microelectronic devices of claim 33 wherein the windows are attached to the corresponding active areas.

[c37] 37. The microelectronic devices of claim 33 wherein the windows are spaced apart from corresponding radiation responsive dies by a gap.

[c38] 38. The microelectronic devices of claim 33 wherein the radiation responsive dies comprise complementary metal-oxide semiconductor image sensors.

[c39] 39. The microelectronic devices of claim 33 wherein the active areas are optically responsive.

[c40] 40. A plurality of microelectronic devices, comprising:

a support member;

a first radiation responsive die and a second radiation responsive die adjacent to the first radiation responsive die, the first and second radiation responsive dies being attached to the support member and having an active area;

a plurality of wire-bonds electrically coupling the first and second radiation responsive dies to the support member;

a barrier at least substantially surrounding the perimeters of the first and second radiation responsive dies, the barrier including a barrier portion that encapsulates at least a portion of the wire-bonds of the first radiation responsive die and at least a portion of the wire-bonds of the second radiation responsive die; and

a radiation transmissive window coupled to the barrier and positioned over the active area of the first and/or second radiation responsive die.

[c41] 41. The microelectronic devices of claim 40 wherein the barrier encapsulates a portion of the first and/or second radiation responsive die.

[c42] 42. The microelectronic devices of claim 40 wherein the support member comprises a substrate.

[c43] 43. The microelectronic devices of claim 40 wherein the window is attached to the active area of the first and/or second radiation responsive die.

[c44] 44. The microelectronic devices of claim 40 wherein the window is spaced apart from the active area of the first and/or second radiation responsive die by a gap.

[c45] 45. The microelectronic devices of claim 40 wherein the window is attached to the barrier with an adhesive.